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The Relationship between Inventory Management Automation and the Performance of Supermarkets in Melaka

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Abstract

In the present-day furiously competitive business landscape, organizations constantly strive for effectiveness, cost optimization, and economies of scale. To meet customer demands, many organizations rely on maintaining inventory. However, managing inventories effectively to achieve organizational goals has become a significant challenge for companies. Determining the optimal inventory levels and investment amounts to satisfy customer needs has proven to be a daunting task for numerous firms. Consequently, organizations have turned to current technology to deal with these problems. This study aims to assess the level of inventory management automation and the performance of supermarkets in Melaka. Furthermore, it seeks to identify the relationship between inventory management automation and supermarket performance in the region. Employing a quantitative research approach, a questionnaire serves as the primary data collection instrument. The study's respondents consist of supermarket employees in Melaka. A total of 190 employees have answered the questionnaire for this study. The collected data will be analyzed descriptively and through correlation using the Statistical Package for the Social Sciences (SPSS). The results of the study show that inventory management automation and performance have a high level of correlation. There is a significant relationship between Inventory Management Automation and Performance supermarkets in Melaka. Future researchers can benefit from the findings of this study.

1. Introduction

This chapter provides an overview of the relationship between Inventory Management Automation and the Performance of Supermarkets in Melaka. The discussion will begin with the background of the study, problem statement, research questions, objectives, scope of the study, and the importance of the study.

1.1 Research Background

Inventory is an essential component of every organization, and managers have a responsibility to give it thoughtful consideration because it consumes an important amount of an organization's available capital (Jenkins, 2020). Inventories are a key aspect of good business management, as they enable organizations to

track products, optimize operations, and make informed decisions regarding resources. Efficient inventory management is vital for a company to strike a balance between efficiency and responsiveness.

Donald (2006) found that many firms experience system failures due to a lack of computerization and poor planning, resulting in large inventories. The occurrence of these failures presents challenges in daily sales accounting, leading to potential inconsistencies between the amounts received and the quantities sold as well as various challenges in accurate demand forecasting. Forecasting the exact quantity of inventory required to meet customer demand is an issue that many material managers must overcome.

Automated inventory systems have not been widely adopted, leading to issues caused by stock shortages. This has prompted various research on Inventory Management Control Systems. Eitel (2023) states that automation employs mechatronics and computers to produce goods and services. Many businesses automate to address labor shortages, high labor costs, the need to increase productivity, and to reduce manufacturing lead times. Inventory can appear in various forms and occupies various locations within the supply chain, including raw materials inventory, work-in-process (WIP), and finished goods. Establishing a streamlined and productive inventory management system poses a significant challenge for many supply chain managers within their respective organizations (Singh, 2016).

To achieve efficient automated inventory management, a variety of systems have been developed to enable that business, including supermarkets, to maintain appropriate stock levels to strike a balance between costs and customer satisfaction (Kenneth, 2014). Such systems include Materials Requirement Planning (MRP), Radio Frequency Identification (RFID), and Enterprise Resource Planning (ERP) (Simchi-Levi, 2009). This research aims to explore the relationship between inventory management automation and the performance of supermarkets in Melaka, providing valuable insights for improving efficiency and customer satisfaction.

1.2 Problem Statement

The Malaysian retail market, which includes supermarkets and hypermarkets, has experienced significant growth in recent years, reaching a value of MYR 105.8 billion in 2019 and accounting for 57% of all retail transactions in the country (Murugiah, 2019). Despite the challenges posed by the Covid-19 pandemic, the Malaysian retail industry has shown remarkable resilience, with a 33.3% growth rate in 2022 (Murugiah, 2023). Major players in the Malaysian supermarket industry, such as Aeon, Lotus's, NSK, Mydin, and Econsave, have contributed to this growth. The Malaysian government has also implemented various measures to support the retail sector, promoting innovation, productivity, and competitiveness (Malaysia Retailers Association, 2022)

One of the key challenges faced by supermarkets worldwide, including Malaysia, is the efficient implementation of automated inventory management systems (Ibrahim, 2023). While these systems have the potential to improve efficiency and reduce costs, their implementation can be complex and expensive. Nevertheless, inventory management automation can significantly impact supermarket productivity by optimizing stock levels, minimizing stockouts, and ensuring product availability for customers.

Automated inventory and performance management processes enable supermarkets to make data-driven decisions, optimizing operations, reducing expenses, and enhancing customer satisfaction (Chituru, 2016; Khadka, 2017). This, in turn, leads to improved performance and increased profitability. The use of IMA in the retail sector has been gaining momentum in recent years, with numerous studies highlighting its potential benefits, such as reduced human error, streamlined operations, and improved customer satisfaction (Adeyemi & Salami, 2010).

However, there is still a lack of comprehensive research examining the direct impact of inventory management automation on the overall performance of supermarkets, particularly in the Malaysian context. Moreover, the adoption of such technologies may vary among different supermarket chains, depending on factors such as organizational culture, management style, and financial resources (Ismail & King, 2018). Therefore, this study aims to investigate the relationship between inventory management automation and the performance of supermarkets in Malaysia, with a focus on the Melaka region.

Therefore, to achieve the research objectives the level of inventory management automation among the supermarkets in Melaka is determined. Furthermore, the level of performance among the supermarkets in Melaka also determined. Consequently, the relationship between inventory management automation and the performance among the supermarkets in Melaka is identified.

1.3 Scope of the Study

This study focused on the supermarkets located in Melaka. Specifically, I surveyed employees of the supermarkets in this area to obtain data for this research objective. Since multiple supermarkets were located in Melaka, the employees of all such supermarkets were eligible to participate in this study. To collect relevant data for this research, I administered a questionnaire to the selected participants. Chapters 4 and 5 presented the interpretation and analysis of data collected during this study.

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1.4 Significance of the Study

This study aims to explore the relationship between inventory management automation and the performance of supermarkets in Melaka. Employees should be more concerned with understanding the connection between inventory management automation and performance because it will have an impact on the entire organization. This research holds significant importance for supermarket employees as it provides valuable insights into effective inventory management and its influence on overall performance.

Furthermore, this study can provide valuable information to employees. Inventory management automation refers to the utilization of automated systems and technologies to streamline and optimize inventory management processes. It involves the use of software, hardware, and other tools to efficiently track, control, and analyze inventory levels, stock replenishment, and other related tasks.

However, comprehending the relationship between inventory management automation and supermarket performance can assist employees in making informed decisions regarding the implementation or improvement of automation systems in their warehouses. By leveraging automation technologies, employees can potentially enhance their performance by reducing manual errors, improving inventory accuracy, optimizing stock levels, and increasing operational efficiency.

Additionally, this research can serve as a guide and reference for students conducting similar studies. Moreover, it can be a valuable resource for future researchers.

2. Literature Review

2.1 Organizational Performance

Organizational performance refers to the ability of an organization to achieve its goals and objectives, and it serves as a measure of its overall effectiveness and success (Abubakar, 2019). It encompasses various dimensions, including financial performance, productivity, customer satisfaction, employee engagement, innovation, and market share (Patro, 2013). Understanding and improving organizational performance is crucial for organizations to thrive and maintain a competitive advantage in today's rapidly changing business landscape (Yusoff, 2019).

According to Cascio (2014), organizational performance is the degree to which the work mission is accomplished, as measured by work outcomes, intangible assets, consumer links, and quality services.

Daft (2007) stated that, organizational performance refers to an organization's ability to achieve its objectives effectively and efficiently by utilizing its resources. Similarly, Rechardo (2001) concurs that organizational performance entails the accomplishment of organizational goals and objectives. Rechardo (2001) further asserts that a high return on equity serves as evidence of an organization's success, and this achievement is facilitated by the implementation of an effective employee performance management system. This system encompasses practices and processes that enable the establishment of clear goals, provision of feedback and performance evaluations, and recognition of high performance.

2.2 Inventory Management Automation

Inventory management automation refers to the implementation of technology and software systems that automate various aspects of managing and controlling inventory within an organization. It involves the use of specialized tools and processes to streamline inventory-related tasks, such as tracking, replenishment, order fulfilment, and forecasting (Waida, 2022).

Inventory management automation offers organizations the opportunity to reduce manual effort and mitigate the risks associated with human error by leveraging software solutions and advanced technologies. These automated systems are often designed to integrate with other essential business systems such as enterprise resource planning (ERP) or warehouse management systems (WMS). Through this integration, organizations can obtain a comprehensive view of their inventory and enable seamless data flow, fostering better decision-making processes (O'Donnell, 2020).

According to Kivimaa (2023) the implementation of automation in inventory management provides various benefits and it enables organizations to monitor their inventory levels in real-time, ensuring timely notifications for reordering or restocking. Additionally, automation streamlines the fulfilment processes, making them more efficient and reducing delays.

Inventory management automation aims to replace labor-intensive manual processes with automated systems capable of managing inventory tracking, replenishment, forecasting, and other associated tasks (Agboola, 2022). Organizations can acquire accurate and real-time information regarding their inventory levels, locations, and movements by employing technologies such as barcode scanning, RFID (Radio Frequency Identification), and real-time data capture. These technologies enable organizations to have precise visibility and control over their inventory, facilitating effective decision-making and streamlining their operations (Burke, 2014; Desingh, 2018).

2.3 Inventory Management Automation and its Impact on Performance

The emergence of technology has had a substantial impact on how firms operate, especially in terms of inventory management. Automated inventory management systems have been designed to increase productivity, save expenses, and boost customer satisfaction (Kenneth, 2014). These systems include Materials Requirement Planning (MRP), Radio Frequency Identification (RFID), and Enterprise Resource Planning (ERP) (Simchi-Levi, 2009). Implementing automated inventory management systems has been found to result in enhanced supply chain performance, better inventory control, and increased sales (Agrawal, Singh, & Murtaza, 2016). In addition, automation in inventory management has been found to reduce stockouts, eliminate lead times, and optimize stock levels, ultimately resulting in higher customer satisfaction and profitability (Gunasekaran & Ngai, 2005).

2.4 Challenges in Implementing Inventory Management Automation

Despite the potential benefits of automated inventory management, many firms, notably supermarkets, confront implementation obstacles. Lack of computerization and inadequate planning, which has resulted in big inventory and difficulty with daily sales accounting, is one of the key obstacles (Donald, 2006). Moreover, material managers sometimes fail to forecast the exact quantity of inventory required to meet consumer demand, resulting in stock shortages and other related problems (Singh, 2016). In addition, the high cost of integrating automation technologies such as RFID and ERP systems may be prohibitive for some firms, especially small and medium-sized enterprises (Aydin & Ozer, 2019).

However, according to Naseri (2021), covid-19 outcomes and some of the main problems used in this study, one of which is that it has disrupted traditional retail methods, demanding a shift towards online buying and working from home. Therefore, enterprises must adapt to e-commerce platforms and explore new methods to spend digitally.

2.5 The Performance of Supermarkets in Melaka

Although there is an insufficient study on the association between automated inventory management and supermarket performance in Melaka, studies undertaken in other regions provide significant insights. Nyaga, Whipple, and Lynch (2010) observed that the deployment of automated inventory management systems in supermarkets led to enhanced operational performance and greater consumer satisfaction. Similarly, Garg and Garg (2014) discovered that the introduction of automated inventory management systems in Indian retail businesses increased inventory control, decreased stockouts, and enhanced overall performance. These findings imply that the implementation of automated inventory management systems could enhance the performance of supermarkets in Melaka, leading to greater consumer satisfaction.

2.6 Conceptual Framework

Figure 2.1 presents the conceptual framework for this study. The independent variable in the model is Inventory Management Automation, while the dependent variable is Organizational Performance.

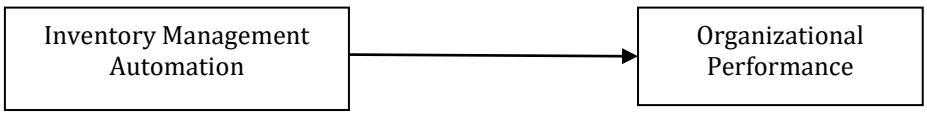

Fig. 1 *Conceptual framework*

2.7 Research Hypothesis

The following hypothesis is considered in this research:

H1: Inventory Management automation has a significant effect on the performance of supermarkets in Melaka.

3. Research Methodology

This chapter will describe the methodology used for this research. The chapter discusses the several methods of research, including the research flowchart, research design, research instrument, population and sampling, data collection, and data analysis in this study. Furthermore, it provides information on the pilot study and discusses the validity and reliability of this study. The chapter concludes with a detailed explanation of the method of analysis that was adopted, and the procedure used to collect the data.

3.1 Research Design

Specific research designs such as description of research methodology selection, research population, research sampling, research instrument, and research flow process need to be explained clearly. This study relied on descriptive research to define its objectives. This study used a quantitative method because it adopted a non-experimental survey method.

3.2 Population and Sampling

The employees of supermarkets in Melaka will be the target population in this study. The population for supermarkets in Melaka consists of 474 employees. The information is gathered from official websites. The size of the sample in this research will be determined by referring to the Krejcie and Morgan table. According to Krejcie & Morgan (1970), the sample size of this study is 214 employees from Mydin, Family Store, and Econsave. Moreover, a cluster sampling technique has been chosen in this study.

3.3 Data Collection

The questionnaire survey is the main source of data for this study. The questionnaires were used in the previous investigation. The questionnaires were distributed to the employees of supermarkets in Melaka through an online platform which is Google Form. Secondary data is a term used to describe information or data that is already available and accepted for research purposes. Secondary data from journals, online articles, and data from universities is also collected in this study to evaluate the research topic's objectives.

3.4 Research Instrument

The research instrument is a method used to collect, evaluate, and analyze data from subjects related to the research topic. In this research study, a questionnaire is used as the data collection instrument.

The questionnaire developed in English. A letter of introduction was included with the questionnaire to make it more convenient for respondents. The letter introduces the researcher, explains the purpose of the study, and the letter guarantees that the respondent's personal information will be treated as entirely private and confidential. The survey questionnaire consists of three sections. Section A is devoted to respondent demographics, section B to inventory management automation, and section C to organizational performance. In sections B and C, respondents must use a 5 Likert scale.

3.5 Data Analysis

Descriptive analysis was used to evaluate all the data from Section A, which included demographic information about the respondents. This analysis was illustrated in the figure, which illustrated the questionnaire results in frequency and percentages. Furthermore, this analysis is also used to describe the relationship between the variables. Correlation analysis was used to answer the last research question which is to determine the relationship between Inventory Management Automation and the Performance of Supermarkets in Melaka. The data gathered will be evaluated using Statistical Package for Social Sciences (SPSS) predictions for analysis for descriptive, normality analysis, and correlation analysis are provided.

4. Results and Discussion

4.1 Survey Return Rate

Table 1 outlines the survey return rate, detailing a population of 474 individuals, a sample size of 214, and the distribution of 214 questionnaires. Out of these, 190 questionnaires were returned, signifying an 89% return rate.

Table 1 *Survey Return Rate*

Population	Sample Size	Questionnaire Distributed	Questionnaire Returned	Percentage (%)
474	214	214	190	89%

4.2 Reliability for Pilot Study

The Cronbach's Alpha reliability test involved thirty employees from three supermarkets in Melaka. Table 2 below represents the value of Cronbach's Alpha for each variable.

Table 2 *Reliability Test for Pilot Test*

No.	Variables	N for Items	Cronbach's Alpha
1.	Inventory Management Automation	8	.793
2.	Organizational Performance	11	.853

The reliability test for the pilot study had been summarized in Table 2. These results showed that Cronbach's Alpha for Inventory Management Automation and Organizational Performance were 0.793 and 0.853 respectively. This indicates that research instruments for full research can be adopted. All the items used in the questionnaire for this study are dependable, as both the independent and dependent variables have a Cronbach Alpha of at least 0.5.

4.3 Reliability for Actual Study

Table 3 *Reliability Test for Actual Study*

No.	Variables	N for Items	Cronbach's Alpha
1.	Inventory Management Automation	8	.903
2.	Organizational Performance	11	.878

The reliability test for the actual study was summarized in Table 3. These results showed that Cronbach's Alpha for Inventory Management Automation and Organizational Performance were 0.903 and 0.878 respectively. This indicates that the research instruments are reliable. All the items used in this study's questionnaires can be trusted, as both the independent and dependent variables have a Cronbach Alpha value of at least 0.5

4.4 Descriptive Analysis (Demographic Analysis)

4.4.1 The Level of Position

Table 4 shows that the responses were distributed at different levels of an organization. Six people, or 3.2% of the group size, are Department Managers from the 190 who answered the survey. In the "Others" category 184 people, 96.8% of the sample size, and most of the respondents. For example, entry-level jobs, middle-level management jobs, and non-managerial staff might all fit into this group.

Table 4 *Level of Position*

Level of Position	Frequency	Percentage (%)
Department Managers	6	3.2
Others	184	96.8
Total	190	100

This data indicates that the survey captured insights from a diverse group within the organization, with a small representation from Department Managers and a significant majority from various other positions across different hierarchical levels.

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4.4.2 Sales Turnover Level of the Supermarkets

Table 4.5 shows the distribution of supermarkets based on their monthly sales turnover. Among the 190 surveyed supermarkets, only 6.3% had a monthly sales turnover ranging from RM10,000 to RM50,000, while a significant majority, comprising 93.7% of the total, reported a sales turnover exceeding RM50,000.

Table 5 *Sales Level of the Supermarkets*

Sales	Frequency	Percentage (%)
RM10,000-RM50,000	12	6.3
>RM50,000	178	93.7
Total	190	100

This data suggests that most of the surveyed supermarkets (93.7%) can be characterized as large-scale operations, given their substantial sales turnover. Additionally, data from Table 4.6 supports this observation.

Table 6 indicates that 52.1% of these supermarkets had invested more than RM100,000, while 47.9% had invested a lesser amount. This investment trend aligns with the higher sales turnover, indicating potential financial capacity for these supermarkets. The higher sales turnover observed among the majority of these supermarkets could potentially serve as a significant revenue source. This increased income might contribute to the supermarkets' ability to invest in automation, thereby potentially enhancing their productivity levels.

Table 6 Investment *Level of the Supermarkets*

Investment Level	Frequency	Percentage (%)
RM50,000-RM100,000	91	47.9
>RM100,000	99	52.1
Total	190	100

4.4.3 Age of the Supermarkets

The age of the supermarkets was determined by asking the respondents to state on a nominal scale how long their supermarkets had been in operation. Out of the 190 responses, it was observed that 41.1% of the supermarkets had been operational for over twenty years, 15.8% were aged between 15-20 years, and 33.2% had less than 5 years. This implies that most of the supermarkets were able to automate their operations to a certain extent because of their experience of the market and customer needs and because they had the capital to automate their systems.

Table 7 *Age of the Supermarkets*

Age	Frequency	Percentage (%)
5-10 years	63	33.2
10-15 years	19	10.0
15-20 years	30	15.8
>20 years	78	41.1
Total	190	100

4.4.4 Specialization of Labour

Table 8 shows that 100% of the supermarkets adhered to the strict specialization of labour. This indicates that most of the supermarket employees are hired to perform duties they are qualified to do. Employees performing duties that they are best at improves employee motivation and organizational performance in the long run. Such decisions to employ qualified employees could also assist supermarkets in achieving high levels of automation because they can acquire the best people to operate the systems.

Table 8 *Specialization of Labour*

Specialize	Frequency	Percentage (%)
Yes	190	100
Total	190	100

4.4.5 Management Structure

Table 9 *Nature of Management Structure*

Management Structure	Frequency	Percentage (%)
Centralize	190	100
Total	190	100

Table 9 shows that 100% of the responded supermarkets had a centralized management structure. The quality and speed of decisions made by management depend on the nature of the management's structure. A centralized management structure system keeps most of the power to make decisions at the top management level. This structure ensures consistent choices and can help the company's direction and standards.

4.4.6 Organizational Culture

The respondents were asked to state the level of resistance they faced from their employees due to the introduction of new technology. This was important in knowing how supportive the employees were as far as inventory management automation was concerned. The results are shown in Table 10.

Table 10 *Level of Resistance to Automation*

Resistance	Frequency	Percentage (%)
No resistance	110	57.9
Moderate	41	21.6
Strong	39	20.5
Total	190	100

The results showed that 57.9% of the supermarkets‟ did not experience any resistance, only 21.6% experienced moderate resistance, and 20.5% experienced strong resistance. This implies that most supermarkets can achieve a high level of full automation because there is not much resistance from the employees. Cumulatively, 80% of the respondents indicated no resistance to automation, which leads to high-performance levels because it indicates a workforce ready to accept change.

4.5 Descriptive Analysis (Independent Variable)

Table 11 indicates the extent to which different automated systems were being employed in the supermarkets. The results indicate a low level of usage of e-procurement in supermarkets, which most probably moderately influences their performance. Mean values ranging from 4.14 to 4.78 reflected the average ratings for each item, indicating varying levels of consensus among respondents. Higher mean scores, such as those for statements affirming the use of barcodes by both cashiers and store staff, the integration of electronic systems for order processing, and the efficiency of EPOS in managing inventory levels, signified a strong agreement among respondents regarding the effectiveness and utilization of these automation tools.

On the other hand, statements like the full automation of inventory management systems and the use of information technology for procurement exhibited slightly lower mean scores, suggesting a moderately lower consensus among participants. The supermarkets have, however, managed to primarily automate their

inventory management (overall mean score= 4.47). This implies that most of the supermarkets are aware of the different automated inventory management systems, and thus, the extent of automation is relatively high.

Table 11 *Descriptive Analysis (Inventory Management Automation)*

No.	Inventory Management Automation	Mean	Standard Deviation
1.	The supermarket has fully automated its inventory management systems.	4.21	0.678
2.	The supermarket has sufficient inventory management systems and tools.	4.25	0.697
3.	The supermarket makes good use of barcode scanners in counting goods at the stores/warehouse.	4.76	0.426
4.	The barcodes are used by both the cashiers and stores staff.	4.78	0.416
5.	Use of the Electronic Point of sale by the cashiers and stores staff assists in managing the supermarket's inventory levels.	4.72	0.452
6.	The supermarket has an electronic system that helps it integrate all its operations from when a customer makes an order to when the order is delivered to the customer.	4.72	0.452
7.	The supermarket uses information technology to purchase some of its commodities (e.g.) placing orders online.	4.21	0.649
8.	Using technology in procurement has greatly enabled the warehousing staff maintain the right inventory levels.	4.14	0.530
	Cumulative Average	4.47	

4.6 Descriptive Analysis (Dependent Variable)

Table 12 indicates the level of organizational performance, provides valuable insights into the perceived impact of Inventory Management Automation within the supermarket context of Melaka. Notably, responses indicating the influence of automation on operational efficiencies received commendable mean scores. Statements such as "Our staff have become more competent in customer service operations because of our automated systems" (Mean = 4.52, SD = 0.66) and "Because of automation, we rarely lose sales due to the failure of not having enough stock" (Mean = 4.62, SD = 0.49) depict a strong consensus among respondents regarding the positive effects of automation on customer service competence and minimizing revenue loss attributed to stock shortages.

Conversely, the statement "Technology use in inventory management in the supermarket has led to a reduction in the number of store staff" (Mean = 3.38, SD = 0.58) received a relatively lower mean score, suggesting a less unanimous agreement among respondents concerning the impact of automation on staffing levels.

Overall, the cumulative average mean of 4.22 indicates a generally positive consensus regarding the perceived benefits of inventory management automation. While some areas received higher ratings, signifying perceived positive impacts on operational aspects, lower-rated statements pinpoint areas where perceptions among respondents may differ or highlight potential concerns, such as the impact on staffing.

Table 12 *Descriptive Analysis (Organizational Performance)*

No.	Organizational Performance	Mean	Standard Deviation
1.	Inventory management automation greatly influences the time taken between placement and delivery of an order.	4.07	0.60
2.	Use of technology in inventory management enhances the level of responsiveness to customers' orders and enquiries.	4.31	0.71
3.	Inventory management automation ensures customer satisfaction and repeat purchases.	4.31	0.71

4.	The inventory management systems used in the supermarket has greatly assisted our staff in improving operational processes within the supermarket and identifying problems quickly and systematically.	4.30	0.71
5.	Our staff have become more competent in customer service operations because of our automated systems.	4.52	0.66
6.	Technology use in inventory management in the supermarket has led to reduction in the number of stores staff.	3.38	0.58
7.	The reduction of errors in inventory management records within the supermarket is directly related to use of information technology.	4.16	0.37
8.	Because of automation, we rarely loose sales due to failure of not having enough stock (opportunity costs incurred due to lost sales).	4.62	0.49
9.	The cost of procurement and material handling has greatly been reduced due to use of technology in managing inventory.	4.56	0.51
10.	Due to inventory management automation, there, are fewer damages (expiries) recorded in the warehouse.	4.12	0.70
11.	Communication with our customers and suppliers has been made effective and cheaper due to use of technology.	4.17	0.55
	Cumulative Average	4.22	

4.7 The Relationship Between Inventory Management Automation and Organizational Performance

Table 13 shows the results of the Spearman correlation coefficient for the relationship between Inventory Management Automation and Organizational Performance. The value of correlation coefficient, r is 0.830 which means that there is a strong and positive relationship between Inventory Management Automation and Organizational Performance within the supermarkets setting in Melaka (r=0.830, p=0.001). Therefore, the first hypothesis (H1) is supported.

This significant relationship highlights the importance of effective Inventory Management Automation in positively influencing the Performance of supermarkets. The findings suggest that investing in and enhancing inventory management systems can contribute to notable improvements in the overall performance and operations of supermarkets in Melaka.

H1: There is a positive relationship between Inventory Management Automation and the Performance of supermarkets in Melaka.

Table 4.13 *Correlation Analysis*

			Organizational Performance
Spearman's rho	Inventory Management Automation	*Correlation Coefficient*	0.830**
		Sig. (2-tailed)	<0.001
		N	190

***. Correlation is significant at the 0.01 level (2-tailed)*

5. Conclusion

As today's technology develops more advanced it gets more important to comprehend completely how it is used. This research indicates that the implementation of inventory management automation in supermarkets is a factor influencing organizational performance. The study's results have successfully addressed the main question of the research. To summarize, the study findings indicate an effective and positive correlation between the automation of inventory management and the performance of supermarkets in Malacca. Future researchers are advised to implement the following recommendations to enhance their work.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: ***study conception and design:*** *N.F.M., and H.Z.;* ***data collection:*** *N.F.M.;* ***analysis and interpretation of results:*** *N.F.M.;* ***draft manuscript preparation:*** *N.F.M., and H.Z. All authors reviewed the results and approved the final version of the manuscript.*

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